

REMARKS

Favorable consideration of this Application as presently amended and in light of the following discussion is respectfully requested.

After entry of the foregoing Amendment, Claims 2, 6-23 and 25-29 are pending in the present Application. Claims 1 and 3-5 have been canceled without prejudice or disclaimer. Claims 25-29 are new. Claims 2, 6-13 and 17-23 have been amended to change dependencies. Support for the newly added claims 25-29 can be found in the original claim 1 and in the specification at pages 7 and 8 and page 10 lines 1-5. No new matter has been added. Five claims have been added and four claims have been cancelled. The applicant authorize the PTO to charge our Deposit Account No. 03-2775, under Order No. 09600-00029-US for the extra claim added over twenty.

By way of summary, the Official Action presents the following issues: Claims 1-24 stand rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by Heider et al. (U.S. Patent No. 5,087,676, hereinafter Heider) ("hereinafter Heider"), or EP 1199315 (hereinafter EP '315), EP 1199316 (hereinafter EP'316). The applicant respectfully traverses these rejections.

REJECTION UNDER 35 U.S.C. § 102

The outstanding Official Action has rejected Claims 1-24 under 35 U.S.C. § 102 as allegedly being anticipated by Heider, or EP '315, EP '316.

Heider

Heider discloses a polymerization process for ethylenically unsaturated monomers (see the Abstract). This process is characterized by the application of a selected system

of radical redox initiators (Heider, claim 1). As possible reduction agents among others alkylsulfinic acids, arylsulfinic acids and hydroxyalkylsulfinic acids are mentioned (Heider, at col. 3, lines 4-7). These reducing agents are not possible in the redox systems of the applicant's invention as the definition of structure (2) in component b) of the present claim 1 does not encompass such compounds. There is a disclaimer in the definition excluding compounds with $R^{13} = R^{14} = \text{hydrogen}$. In addition, Heider does not disclose the oxidation agents a1), a2) and a3) of the newly added claim 25 compounds. The applicant has informed the undersigned that the oxidants in the claim 25 are water insoluble compounds.

In the list on col. 2, lines 61-64, of Heider besides several water soluble oxidation agents also benzoylperoxide is mentioned. But this compound is different in structure from the oxidation agents of the claim 25. Additionally these oxidation agents are used for the oxidation of vanadium compounds (Heider, col. 2, lines 58-60) and not for the reduction of residual monomers. In Heider, redox initiator systems with water soluble oxidation agents are disclosed.

Starting from Heider there is no motivation for one of ordinary skill in the art to modify the process disclosed in Heider (e.g. in claim 8) to result in the process of the present invention. Thus there is no indication in Heider to use a reduction agent of formula (2) in combination with exclusively water-insoluble oxidation agents. For the above reasons, this rejection should be withdrawn.

EP '315

EP '315 is disclosed in paragraph no. 0010 of the applicant's published specification, US 2005/0222374. EP '315 discloses a redox system for the preparation and/or for the reduction of the residual monomer content of polymer dispersions. Said redox system requires a mixture of a water soluble and of a water insoluble oxidation agent together with a sulfinic acid or a salt thereof (EP '315, claim 1). Examples for water soluble oxidation agents are hydrogen peroxide or ammonium or alkali metal persulfates, perborates, peracetates, peroxides and percarbonates (EP '315, page 3, lines 14-15). The application of these oxidation agents is excluded from the process of this invention. Only selected water insoluble oxidation agents or a mixture of such agents can be used. Therefore the claimed subject matter is novel over EP '315.

In comparative Example B of EP '315, it is demonstrated that the sole application of a water insoluble hydroperoxide in combination with a derivative of sulfinic acid results in non acceptable residual monomer content and VOC-content. In the instantly claimed process it was surprisingly found that this result can not be transferred to other oxidant agent classes of a1) – a3). Therefore the claimed process is not obvious over EP '315. For the above reasons, this rejection should be withdrawn.

EP '316

EP '316 is disclosed in paragraph no. 0011 of the applicant's published specification. EP '316 discloses the application of a non-formaldehyde forming radical redox initiator system for the preparation and aftertreatment of polymer dispersions (EP

'316, claims 1 and 5). As oxidation agents tert.-alkyl hydroperoxides, tert-alkyl peroxides or tert-alkyl peresters are disclosed, which have a tert. alkyl group of at least **five carbon atoms** (EP '316, see the abstract, claim 1, or page 4, lines 17-18). These are used in combination with different reducing agents one thereof being 2-hydroxy-2-sulfinato acetic acid (EP '316, page 3, lines 8-12). (alkali metal and ammonium salts of sulfur containing acids, such as sodium sulfite, bisulfite, amines such as ethanolamine, glycolic acid, glyoxylic acid hydrate, ascorbic acid, isoascorbic acid, lactic acid, glyceric acid, malic acid, 2-hydroxy-2-sulfinatoacetic acid, tartaric acid and salts of the preceding acids).

In EP '316 there is no combination of oxidation agent of type a) with a reduction agent of type b) of the present claim 25 is disclosed. Furthermore, in EP '316 no detailed information about the tert-alkyl perester with tert.alkyl groups of at least five carbon atoms is found. Only the alcohol part of the perester is disclosed but not the acid part. Therefore in EP '316 the oxidation agents used in the instant claim 25 are not disclosed.

The surprising results of the redox initiator system used in the process of the instant invention is not evident from the process disclosed EP '316. For the above reasons, this rejection should be withdrawn.

Claims 26-29

Claims 26-29 are drawn to redox initiator systems with oxidation agents having tert.butyl groups should be presented. These oxidation agents having only four carbon

atoms at the tert.-alkyl group and are outside of the definition of the oxidation agents used in EP '316.

Oehmichen

Although the claims were not rejected over this reference, the applicant does not believe that this reference is applicable prior art for the following reasons. Oehmichen discloses a process for the production of aqueous polymer dispersions which are substantially free from residual monomer is disclosed (Oehmichen, see the title and claim 1). While in this document reducing agents can be used in combination with oxidation agents, there is no disclosure about using compounds of formula (2) of the instant claims. In the list on col. 4, lines 21-36, different chemical compound classes are contained. Therefore the applicant believes that this reference is of no relevance for the patentability of the presently claimed process and was correctly not applied against the claimed invention.

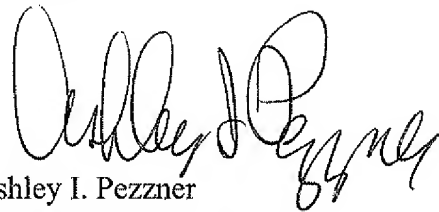
CONCLUSION

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the present Application, including Claims 2, 6-23 and 25-29 are patently distinguished over the prior art, in condition for allowance, and such action is respectfully requested at an early date.

A three month extension fee has been paid. Applicant believes no fee is due with this request. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 09600-00029-US from which the undersigned is authorized to draw.

Respectfully submitted,

CONNOLLY, BOVE,
LODGE & HUTZ, L.L.P.

A handwritten signature in black ink, appearing to read 'Ashley I. Pezzner', is written over the printed name and title.

Ashley I. Pezzner
Registration No. 35,646
Attorney of Record

CUSTOMER NUMBER

23416

Phone: 302-658-9141

Fax: 302-255-4270

AIP/rec